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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,296	05/17/2005	Mark T. Johnson	NL 021320	5856

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EXAMINER

CHOW, YUK

ART UNIT	PAPER NUMBER
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2629

MAIL DATE	DELIVERY MODE
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09/07/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/535,296	Applicant(s) JOHNSON ET AL.	
	Examiner Yuk C. Chow	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10/19/2006</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Oath/Declaration

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

It does not state that the person making the oath or declaration acknowledges the duty to disclose to the Office all information known to the person to be material to patentability as defined in 37 CFR 1.56.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Tanada (US 2002/0047550 A1).

As to claim 1, Tanada discloses a method of improving the output uniformity of a display device (see abstract), comprising the following steps: detecting a first emitted brightness of at least one pixel (Fig. 1(107)) of display device (Fig. 1(108)); by means of the detected first brightness (Fig. 1(101A)), determining the non-uniformity of an output of a driver circuit (see abstract) being connected with said at least one pixel; based on said first detected brightness, generating a calibration factor (Fig. 2C(B2)) for the at least one pixel, to be used to modify the output of the driver circuit (Fig. 1(111)), in order to improve the uniformity.

As to claim 2, Tanada discloses a method according to claim 1, wherein said display device is a self light emitting display device (see title).

As to claim 3, Tanada discloses a method according to claim 1 or 2, wherein said display device is an organic light emitting diode based display device (Fig. 7B(5035) see [0164]).

As to claim 4, Tanada discloses a method according to any one of the claims 1-3, further comprising the steps of: after detecting said first emitted brightness (Fig. 1(101A)), adjusting an average display brightness ([0106], standard brightness), and thereafter detecting a second emitted brightness of said at least one pixel (Fig. 1(101B)), and based on said first and second detected brightnesses, generating a calibration factor for the at least one pixel, to be used to modify the output of the driver circuit, in order to improve uniformity (see [0103]-[0106]).

As to claim 5, Tanada discloses a method according to any one of the claims 1-4, wherein the step of detecting the emitted brightness of at least one pixel is performed by means of an external imaging system (see [0062]).

As to claim 6, Tanada discloses a method according to any one of the claims 1-5, wherein said driver circuit is one of a pixel driver circuit or a data driver circuit (Fig. 4A(403)).

As to claim 7, Tanada disclose a method according to any one of the claims 1-6, wherein said display device is a active matrix polymer (Fig. 5A-5C, show an example of a process of producing an active matrix self light emitting device) or organic light emitting diode display device (Fig. 7B(5035) see [0164]).

As to claim 8, Tanada discloses a method according to claim 7, wherein the step of detecting the emitted brightness of at least one pixel comprises the step of individually detecting the emitted brightness for each of a plurality of pixels (see [0130], brightness detection in each pixel is discussed).

As to claim 9, Tanada discloses a method according to claim 7 or 8, further comprising the step of aligning, in one of a column or a row of pixels, all transistors of all pixels in a direction, being the direction of a laser beam during a laser recrystallisation step during the fabrication of said transistors (see [0163] YAG laser is used).

As to claim 10, Tanada discloses a method according to any one of the claims 1-6, wherein said display device is a passive matrix polymer or organic light emitting diode display device (Fig. 7B(5035) see [0164]).

As to claim 11, Tanada discloses a method according to any one of the claims 1-7 and 9-10, wherein the step of detecting the emitted brightness of at least one pixel comprises the step of jointly measuring the emitted brightness of a group of pixels (see [0120]), such as a column or a row of pixels (Fig. 2B(201-203), being commonly controlled by a common driving device (Fig. 2A(Gate Signal Line)).

As to claim 12, Tanada discloses a method according to any one of the preceding claims, wherein said calibration factors are memorised in the driver circuit by one of the methods; storing the calibration factors in a memory device (Fig. 1(104)), burning fuses on one of a transistor substrate or an additional driver integrated circuit, or laser trimming of one of a transistor substrate or an additional driver integrated circuit.

As to claim 13, Tanada discloses a system for calibrating a display device (Fig. 1(108)), for improving the output uniformity of the same, comprising a unit (Fig. 11A(3301)) for holding a display device to be calibrated, an imaging system (Fig. 1(106)), being positioned so as to, when in use, detect emitted brightness from the entire display device surface of the display device, and a feedback system (see Fig. 1, driver 111 is fed to memory circuit 100 then to correction circuit. Back to display), for transmitting information regarding the emitted brightness back to the display device, the system being arranged to perform the method according to any one of the claims 1-12.

As to claim 14, Tanada discloses a system according to claim 13, wherein said display device is a self light emitting display device, preferably an organic light emitting diode based display device (Fig. 7B(5035) see [0164]).

As to claim 15, Tanada discloses a self light emitting display device (see title) for use with a system as defined in claim 13.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanada in view of Hack et al (US 2002/0030647 A1).

As to claim 16, Tanada discloses a self light emitting display device as defined in claim 15, wherein the display device comprises a plurality of light emitting pixels being

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arranged in a row and column structure, wherein either each column or each row of pixels being connected with a data driver circuit.

However, Tanada does not teach each column or row comprises an additional non-light emitting pixel, incorporating a current measurement device, for monitoring a relative change over time of an output signal from said data driver.

Hack discloses a uniform active matrix OLED display wherein teaches an additional non-light emitting circuitry component (Fig. 7(500)), incorporating a current sensor circuit (Fig. 8(70)).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize a current sensing device of Hack into self light emitting display device of Tanada, because the brightness of a light emitting device is directly related to the supplying current. In order to produce a proper brightness on a pixel by pixel basis throughout the lifetime of the display, a current sensor circuit allows monitoring current-voltage characteristics of the pixels (see Hack [0016]).

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yuk C. Chow whose telephone number is 571 270-1544. The examiner can normally be reached on 8-6 M-TH E.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on 571 272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

YC
08/31/2007


AMARE MENGISTU
SUPERVISORY PATENT EXAMINER